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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,036	06/06/2001	Takashi Yamaguchi	108419-00020	7608

7590 08/12/2002
ARENT FOX KINTNER PLOTKIN & KAHN, PLLC
1050 Connecticut Avenue, N.W., Suite 600
Washington, DC 20036-5339

EXAMINER

GARBER, CHARLES D

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 08/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/874,036	YAMAGUCHI ET AL.	
	Examiner	Art Unit	
	Charles D Garber	2850	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

Applicant's election without traverse of Group I, claims 1-6 in Paper No. 4 is acknowledged.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Busato et al. (US Patent 5,957,115).

Busato discloses a pulse interval leak detection system (title) for a vehicle emission system including fuel tank 2 and vapor collection canister 1 which supplies the evaporative fuel absorbed in the canister to an intake manifold 6 of an internal combustion engine. The leakage detection system includes pressure sensor 14 which is pressure detection means for detecting pressure within the evaporative fuel system; a canister purge solenoid valve 8 which is pressure reduction means for reducing the pressure within the evaporative fuel processing system until the detected pressure

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within the evaporative fuel processing system becomes equal to a predetermined negative pressure shown in figure 4 as an upper regulating limit. Negative pressure is introduced from the intake system by the purge valve 8 (column 4 lines 28-36). When the pressure sensor senses that the URL has been reached the purge valve is operated closed. This is shown in figure 4 as the "Initial Pressurization Time" and ends at time equal 5 seconds in the example. If a leak is present, vacuum begins to be lost. When the vacuum sensed by the pressure sensor reaches the Lower Regulating Limit (LRL) the computer commands the purge valve to open which causes vacuum to increase which is equivalent to negative pressure introduction means for introducing the negative pressure from the intake system into the evaporative fuel processing system (under the predetermined condition wherein the pressure reaches a LRL) after the pressure reduction by said pressure reduction means as in the instant invention (see figures 3 and 4 and column 5 lines 10-21). Computer 12 is considered to be equivalent to leakage determination means for determining whether or not there is a leak in the evaporative fuel processing system, based on a state of the pressure within the evaporative fuel processing system, which has been detected during the introduction of the negative pressure from the intake system by said negative pressure introduction means. The computer 12 determines a leak and leak size based on the interval between successive negative pressure introduction cycles (column 5 lines 22-38).

As for claim 2 Busato discloses the effectiveness of the inventive system and method is predicated on reasonable stability of the pressurizing source. Stability may be defined as the state or quality of being stable, especially constancy of character;

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steadfastness. Examiner considers that Busato is therefore disclosing the advantage of using a constant pressure source in such a test. In the case of a negative pressurization system, Busato recommends a pressure regulating purge valve as in US Patent 5,069,188 which inherently provides a constant flow rate at idle speeds or constant rate at any given duty beyond idle (column 6 lines 9-21).

As for claim 3, as shown in figure 4 from time equal 5 seconds and subsequently, with the vent closed and using the computer controlled purge valve Busato repeatedly reduces the pressure to URL whenever the pressure rises to LRL during a test period. This is equivalent to the negative pressure introduction means including pressure re-reduction means for holding the evaporative fuel processing system in a closed state and introducing the negative pressure from the intake system whenever the pressure within the evaporative fuel processing system rises to a predetermined pressure higher than the predetermined negative pressure, to thereby repeatedly reduce the pressure within the evaporative fuel processing system to a second predetermined negative pressure lower than the predetermined pressure as in the instant invention.

The second predetermined negative pressure shown in figure 4 after the "Initial Pressurization Time" at time equal 7, 9, 11, 32, and 34 seconds is also equal to the URL which is lower than the predetermined pressure or LRL.

As discussed above with respect to claim 2 the computer 12 determines a leak and leak size based on an analysis of the intervals between successive negative pressure introduction cycles (column 5 lines 22-38). This is considered equivalent to pressure reduction cycle detection means for detecting a pressure reduction cycle of the

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pressure reduction performed by said pressure re-reduction means, and leakage determination means determining whether or not there is a leak in the evaporative fuel processing system, based on a plurality of pressure reduction cycles detected by the pressure reduction cycle detection means as in the instant invention.

Claims 4-6 are considered to be substantively equivalent to claims 1-3 discussed above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references cited on the accompanying form PTO-892 are listed to show examples of state of the art vehicle evaporative emission system leak detection apparatus and methods, which share one or more features in common with the instant invention.

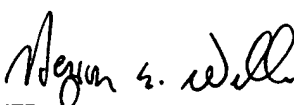
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D Garber whose telephone number is (703) 308-6062. The examiner can normally be reached on Monday to Friday, 7:00 AM-3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7725 for regular communications and (703) 308-7725 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

cdg
August 7, 2002


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800